

Remarks/Arguments

Claim 1-8 and 10-19 are pending in the application.

Claim 1 has been amended, and now includes the features according to which the exhaust gas in the internal space (9) is adapted to flow from the opening (8) of one of the hollow domes (7) disposed on one of the walls (5,6) to the opening (8) of one of the hollow domes (7) disposed on the oppositely disposed wall (6,5) and along outer surfaces of the hollow domes (7), wherein the outer surfaces of the hollow domes (7) are provided with a catalytically active coating. Support for these features can be found in the specification, at least on page 8, lines 12 – 15, plus in original claim 9, as well as in conjunction with Fig. 2. Claim 19 has also been amended, and now includes the feature that the exhaust gas flows through the flow gap (13). Support for this feature can be found at least on page 8 of the specification, in the paragraph starting at line 5, in conjunction with Fig. 2.

CLAIM REJECTIONS-35 USC § 103

The Examiner has indicated that Claims 1-9 and 13-19 are rejected under 35 USC 103 (a) as being unpatentable over Jourdan in view of Karlsson. In particular, the Examiner has indicated that it would be obvious to one having ordinary skill in the art to provide a catalyst coating as taught by Karlsson in the device of Jourdan.

Amended Claim 1 of the present application now requires that the outer surfaces of the hollow domes be provided with a catalytically active coating. It is respectfully submitted that there is no motivation or suggestion in the cited references to replace the filling material that is disposed between the filter cartridges of Jourdan with a catalytic coating. As shown by the arrows in Fig. 3 of Jourdan, the exhaust gases flow transversely through the openings in the cartridges so that the exhaust gas can flow through the filling material. Due to the arrangement of the openings at the periphery of the cartridges, the exhaust gases flow transversely in or out through the wall of the cartridge. Thus, although the exhaust gas is in close contact with the filling material that is disposed between the cartridges, due to the

arrangement of the openings in Jourdan there is no contact of the exhaust gas with the outer surfaces of the cartridges. In fact, a catalytic coating on the outer surfaces of the cartridges of Jourdan would mean that no significant catalytic conversion of the exhaust gases would any longer occur, since there would be an inadequate contact of the exhaust gas with such catalytic material. Therefore, a combination of Jourdan and Karlsson would not be obvious to one of skill in the art. At this point, the Examiner's attention is respectfully directed to MPEP 2143, which states that to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all of the claim limitations. Thus, with regard to amended claim 1, since none of these criteria have been met, no prima facie case of obviousness has been established. As further stated in the third paragraph of MPEP section 2143.01, obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so. In view of the specific requirement of Jourdan for filling material for effecting a catalytic conversion, there can certainly be no suggestion for replacing such a filling material with a catalytic coating. In addition, the proposed combination of Jourdan and Karlsson would be improper pursuant to MPEP 2143.01 VI, since such a combination would change the principle of operation of Jourdan.

Further support for applicant's assertion that there would be no suggestion or motivation for one of ordinary skill in the art to replace the filling material of Jourdan with the catalytic coating of Karlsson can be seen from the teaching of Jourdan itself. In particular, in column 5, lines 2-5, in discussing the novelty of his invention, Jourdan indicates that a close or interior contact is to be achieved between the exhaust gas and the filling material of the cartridge. However, it is respectfully submitted that where a catalytic coating of hollow

domes is provided, as required by applicant's amended claim 1, the critical and necessary interior contact required by Jourdan can no longer be achieved. Therefore, one of ordinary skill in the art would find no motivation or suggestion for replacing the filling material of Jourdan with a catalytic coating. In reality, with its requirement for a filling material Jourdan actually teaches away from the use of a catalytic coating.

The Examiner has indicated that the arrangement of an opening only at the free end of a hollow dome is an obvious matter of design choice within the level of ordinary skill in the art that does not alter the operation of the device. However, it is respectfully submitted that by means of applicant's claim 1 arrangement of openings only in the region of the free ends of the hollow domes there results an altered guidance of the flow in the catalytic converter, since with the arrangement required by amended claim the exhaust gas flows along the outer surfaces of the hollow domes from one opening, which serves as an inlet, to another opening, which serves as an outlet. Jourdan in no way provides such a flow of exhaust gas along outer surfaces of its hollow domes or cartridges. In fact, a flowing of exhaust gas along the outer surfaces of the cartridges is not even expedient with Jourdan, since with this reference the catalytic reduction is supposed to take place in the filling material that is disposed between the cartridges, and not on outer surfaces of the cartridges. Jourdan has a specific reason for providing his openings in the peripheral surfaces of the cartridges and not in the free ends thereof. Thus, it is respectfully submitted that the difference in the precise location of the openings between Jourdan and the present application provides a significant difference in how the exhaust gas flow is diverted, so that based on these different requirements one of ordinary skill in the art would find no teaching or suggestion in Jourdan to dispose the openings exclusively in the region of the free ends of the hollow domes, as required by applicant's claim 1, in order in this manner to fundamentally alter the flow guidance in the muffler of Jourdan. However, it is with this fundamental alteration of the flow guidance provided by applicant's claim 1 that it is for the first time possible to achieve an

adequate catalytic effect by means of a catalytic coating on the outer surfaces of hollow domes, in distinct contrast to the principle of operation taught by Jourdan of providing flow of exhaust gas through a filling material that is catalytically impregnated.

In view of the foregoing distinctions, it is respectfully submitted that the subject matter of applicant's claim 1 is in no way derived by a combination of the features of the cited references, but rather requires a deliberate alteration of the flow guidance taught by Jourdan in order to even make it possible to be able to use a catalytic coating. The cited art offers no guidance nor suggestions for accomplishing this.

The Examiner cited the cases *In re Japikse* and *In re Kuhle* from MPEP 2144.04 VI.C. These cases deal merely with a rearrangement of parts in a situation where there is no change in manner of operation. However, this is not the present situation, where, as explained above, the catalytic converter of applicant's claim 1 does have a different manner of operation than that of the cited reference. Thus, it is actually the next two sentences of MPEP 2144.04 VI.C. that are relevant for the present situation. In particular, stating from the decision in *Ex parte Chicago Rawhide Mfg. Co.*, this paragraph of the MPEP states that [h]owever "The mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims...is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's specification, to make the necessary changes in the reference device.". It is respectfully submitted that in view of the far different manner of operation of Jourdan, there can be no such motivation in Jourdan to dispose the openings in the precise manner required by applicant's claim 1. Thus, not all of applicant's claim limitations are taught or suggested by the prior art, so that pursuant to MPEP 2143.03, no prima facie case of obviousness has been established. It should also be noted that the recent KSR Supreme Court decision reaffirmed the need for the Examiner to make explicit

reasons that would have prompted a person of ordinary skill in the art to combine the prior art elements in the manner suggested by the Examiner.

With regard to claim 19, as amended this claim now requires that the free ends of the hollow domes extend nearly to the oppositely disposed wall while forming a flow gap (13) through which the exhaust gas flows, with such flow gap being about 2 to 3 mm. The Examiner has indicated that such a flow gap could be determined by routine experimentation. However, it is respectfully submitted that the cited art provides no teaching or suggestion that it would be advantageous to guide the exhaust gas through a relatively narrow flow gap. In particular, Jourdan provides a significant spacing between the individual cartridges. This is understandable since a large amount of space must be provided between the cartridges of Jourdan in order for a catalytic conversion of the exhaust gas to take place in the filling material. Therefore, it is respectfully submitted that it would in fact not be obvious to one of skill in the art to make the distance or spacing between adjacent cartridges, through which spacing the exhaust gas flows, small, since if the spacing or gap between adjacent cartridges in Jourdan were small, one would certainly expect that it would no longer be possible to obtain an adequate catalytic conversion of the exhaust gas. Thus, unless a large spacing is provided, Jourdan could not operate in the manner intended, and the modification proposed by the Examiner would render Jourdan unsatisfactory for its intended purpose. Thus, pursuant to MPEP 2143.01 V. Jourdan is not a proper reference, since there would then be no suggestion or motivation to make the proposed modification.

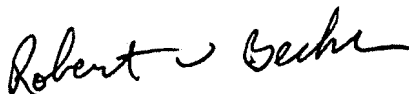
In contradistinction to Jourdan, with the catalytic converter defined in amended claim 19 the flow gap that is formed between the free ends of the hollow dome and the oppositely disposed wall of the housing has an entirely different function than does the spacing between the cartridges of Jourdan. In particular, in Jourdan the spacing of the closed free ends of the hollow domes has no recognizable function. However, applicant's flow gap serves for the achievement of high flow velocities in the region of the free ends of the hollow

domes. The high flow velocities cause a transverse flow between the hollow domes, resulting in a uniform stressing of the surfaces of the components.

Jourdan provides no teaching or suggestion of how to have the exhaust gas be supplied more uniformly to the catalytic material. A flow gap between the free ends of the cartridges and the opposite wall of the housing is not expedient and is not addressed by Jourdan, since due to the arrangement in Jourdan of the passages on the periphery of the cartridges in the area between the free ends and the respectively oppositely disposed wall of the housing no flow gap is formed. Jourdan provides no teaching or suggestion either for the formation of a flow gap at the free ends of the cartridges or for the dimensioning of the flow gap to be about 2 -3 mm for achieving high flow velocities that result in a uniform acting upon of the components. Thus, it is respectfully submitted that claim 19 is also patentable over the cited art.

In view of the foregoing discussion, applicant's respectfully request reconsideration of the allowability of all of pending claims 1-8 and 10-19. Should the Examiner have any further comments or suggestions, the undersigned would very much welcome a telephone call from him in order to be able to resolve any outstanding issues and to expedite placement of the application into condition for allowance.

Respectfully submitted,



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